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From Innovation to Standard Practice: Developing and Disseminating Behavioral Procedures

Stan C. Paine and G. Thomas Bellamy
University of Oregon

This paper proposes a three-stage continuum for discussing the development and dissemination of behavioral technology. At the level of behavioral *techniques,* researchers need only establish a functional relationship between technologically defined intervention procedures and socially significant target behaviors. Dissemination is conducted for informational purposes only, and the purposes and details surrounding subsequent use of the technique are left to the discretion of the user. At the level of behavioral *demonstration,* a collection of socially acceptable intervention procedures is refined and standardized and must be shown to produce behavior changes across a number of subjects. Here dissemination is conducted, in large part, to generate support for provision of services. At the level of behavioral *models,* procedural descriptions must be user-oriented. Additionally, model effects must be obtainable by agents not associated with their development and must compare favorably with other treatment or service alternatives. The purpose of dissemination at this level is to obtain adoptions and replications of the model. Details of development and dissemination of behavioral technology at each of these three levels are discussed.

Since the field of applied behavior analysis began more than two decades ago, significant progress has been made in identifying a wide variety of behavioral procedures to fit a vast array of problems which people face in their daily lives. Improvements have been made in the design and implementation of procedures for instructing and managing students in classrooms; teaching appropriate behaviors of daily life to predelinquent, retarded, and psychotic residents in group homes and institutions; rearing children in natural homes; and providing preventive and remedial human services in community settings. While this broad progress appears to support the strategy of developing innovative behavioral practices, many of these procedures are little used (Stolz, 1982). Further, the diversity among these efforts raises several definitional issues. For example, the reported innovative practices have ranged from simple behavior change techniques to comprehensive classroom, group home, or other agency operating procedures; "development" of an innovation appears to have been interpreted to mean almost everything from eloquent theoretical justifications to careful field testing of standardized procedures; and "dissemination" has encompassed such varied activities as program visitations, newsletters, journal articles, and systematic replication of total programs. While such diversity of effort has been critical to initial progress, we believe the field would now benefit from an attempt to clarify these efforts into a taxonomy of procedural development and dissemination. This task could produce several advantages: (1) it could help set clear standards for researchers working at each of the various levels of procedural development and dissemination; (2) it could help researchers move more systematically across levels as they enter a new area or advance through an anticipated program of research; (3) it could facilitate more precise communication with professionals in allied fields and with funding agents; (4) it could help structure undergraduate and graduate student training programs in behavior analysis. Failure to perform this task could limit the focus of future development and dissemination efforts and ultimately limit the impact of the money invested to support them.

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Therefore, this paper argues for more precise specification of development and dissemination activities in behavior analysis. Specifically, the paper addresses the relationship between *levels* of development of innovative practices and *purposes* for which dissemination should be attempted. It is argued here that innovative practices in the area of behavioral service delivery be classified into three levels which correspond to three broad dissemination objectives. The paper proposes labels, definitions, and criteria for each of the three levels of development. This framework is then used to evaluate current successes and suggest new directions in the field of applied behavior analysis.

RELATIONSHIP BETWEEN DEVELOPMENT AND DISSEMINATION

The challenge of maximizing the impact of research findings has received considerable attention in the social science literature (c.f. Rothman, 1980; Havelock, Note 1), but to date this work has been largely theoretical, and it has failed to bridge the gap between research and practice. Therefore, we propose a new conceptualization.

The relationship between development and dissemination of behavioral procedures is a logical one. Dissemination can occur for a variety of purposes, each of which requires a different level of development. Consider three broad dissemination purposes:

(1) *To share information that a particular procedure can produce behavior change.* For example, an article about a technique might be published so that readers can adapt or incorporate it where applicable into their behavior change efforts.

(2) *To generate support for a new approach or program.* A new solution to a social problem may be communicated widely to parents, professionals, legislators, and the community to increase support for and acceptance of the procedure.

(3) *To assist a service agency in adopting and implementing an innovative practice.* Assistance may be given to service providers to help them use a new program to solve identified service problems.

Although these purposes of dissemination are not commonly differentiated, each implies a specific set of criteria that relate to development of a procedure. These differences in criteria underlie the distinction drawn here between levels of development of innovative practices: *Techniques* are those practices that meet criteria for the first listed dissemination purpose; *demonstrations* meet criteria for the second; and *models* meet the criteria for the third. Table 1 provides a schematic overview of the relationship between dissemination purposes, criteria, and levels of development. As suggested in the figure, criteria are cumulative. The development of a practice from technique to demonstration to model is a sequential process involving several criteria at each level. Meeting these criteria justifies additional dissemination activities.

The distinction between techniques, demonstrations, and models is further illustrated in Table 2, where the three levels of development are contrasted along several dimensions critical to innovative practices. Important differences relate to the process of developing innovations (including issues such as the dependent and independent variables, research questions addressed, and the criteria for development) and the process and purposes of disseminating innovations (for example, the audience for dissemination, methods used, and intended impact on audience members). The following sections describe these differences and elaborate the process of developing and disseminating innovative practices at each level.

TECHNIQUES

In this paper, techniques are defined as procedures, materials, rules, activities, or other environmental changes (antecedents or consequences) used to change the behavior of one or more persons. Examples of techniques currently used in behavioral services include discrete operations such as praising, prompting, shaping, and ignoring; somewhat more complex procedures like time-out, overcorrection, and token economies; and a

TABLE 1

Relationship Between Program Development Criteria, Dissemination Purposes, and Levels of Development of Innovative Practices[1]

Program Development Criteria	Level of Development and Dissemination Purposes		
1. Intervention technique defined	Level of development: Techniques	Level of development: Demonstration	Level of development: Model
2. Specification of a socially significant target behavior	Purposes of dissemination:	Purposes of dissemination:	Purposes of dissemination:
3. Functional relationship between technique and a behavior	(a) Information for adaptation of technique to fit user's purpose	(a) Information for adaptation of techniques for user's purpose	(a) Information for adaptation of techniques for user's purpose
4. Social acceptability of intervention procedures		(b) Generation of support for new approach or service	(b) Generation of support for new approach or service
5. Definition and standardization of a set of intervention procedures			
6. Data regarding generality of effect across students or service recipients			(c) Dissemination for adoption or replication
7. User oriented description of procedures (implementation manuals)			
8. Data regarding generality of effect across program users			
9. Comparison of costs and effects with alternate approaches			
10. Contextually appropriate (Fawcett, et al., 1980)			

[1]Criteria and purposes are assumed to be cumulative across levels of development.

TABLE 2

Comparison of Techniques, Demonstrations, and Models on Critical Dimensions of Innovative Practices

PHASE	Level of Development / Dimension	Techniques	Demonstrations	Models
DEVELOPMENT	Process of Development	Applied behavior analysis (method-oriented research)	Program development and programmatic research (problem-oriented research)	Field testing (method and problem-oriented)
	Dependent variable	Any important behavior	Socially significant behavior problem or outcome	Socially significant behavior problem or outcome
	Independent variable	Procedures, materials, etc., designed to change someone's behavior	Treatment program designed to solve a problem for several service recipients	Treatment program designed for use by non-developers
	Research objective	Identify functional relationships	Show generality across service recipients	Show generality across program users
DISSEMINATION	Objective	Tell how	Tell about	Tell how
	Target Audience	Professionals, service providers	General public	Service providers, and purchasers (funding agents)
	Illustrative Dissemination Process	Journal articles Conference presentations	Media, program visits	Manuals technical assistance
	Intended Audience Impact	Adapt procedures to own objectives and use	Support the program	Adopt the program
	Responsibility for Audience success	Audience responsibile	Audience responsible	Responsibility shared by audience and developers

variety of prosthetic strategies such as biofeedback devices and mobility aids.

Dissemination Purpose

Techniques are disseminated to document that behavior change is possible using the particular procedures. This dissemination should contribute to ongoing development of procedural information about the technique and provide enough information to apply it in a new behavior change context. An important feature of techniques is that, after dissemination, the purposes for which they are used and the details of application are left to the discretion of the user, rather than specified by the developer. As a result, techniques are described as "value free" (Bandura, 1969; Skinner, 1971).

Criteria

Before the dissemination purposes for techniques can be served, three criteria should be met; these follow directly from those advanced by Baer, Wolf, and Risley (1968): (1) the technique should be described sufficiently well that it can be applied by others in different contexts; (2) the importance of the behavior and the effect of the intervention should be socially significant in the context of application (Wolf, 1978); and (3) there should be a convincing demonstration of a functional relationship between the technique and the behavior to which it was applied.

Development

The process of developing techniques is well known as the applied analysis of behavior. This section draws extensively from the review of Baer et al. (1968) on the characteristics of behavior analysis.

Dependent variables. The dependent variable in the development of a technique can be any behavior that has social significance for the user or the recipient of service. This social significance is the index which Baer et al. (1968) refers to as the "applied" dimension in applied behavior analysis. To meet this criterion, a behavior must be significant in some natural context or meaningful to the person to whose behavior the technique is applied.

Independent variable. The independent variable in development of techniques is always a single intervention or treatment procedure. This might be a discrete procedure with a single functional element or a somewhat more complex method with two or more functional parts, like overcorrection or a token economy. Basic to the development of techniques is clear procedural specification. When techniques are disseminated precise description provides information about the relationship between the procedure and behavior change. It is not necessarily a guide for implementation by the user, since the purpose and conditions of use may vary. The use of techniques is not uniform from one instance to another, but rather the rules or contingencies by which a technique is applied are specified by each user.

Independent variables (techniques) also should be compatible with established concepts in the field. That is, the language used to describe them should be consistent from one developer to another. This facilitates expansion of knowledge about the technique and enables broad participation in its development. Baer et al. (1968) labeled this the "conceptual" criterion, suggesting that a shared conceptual framework facilitates the development of knowledge about a technique or procedure.

Research questions. The question that must be asked about techniques before dissemination is whether the technique is functionally related to a change in the behavior to which it is applied. Generally, three or more replications are requested to establish the relationship (Risley & Wolf, 1973). Subsequent replications that are procedurally similar strengthen the relationship while those that alter one or more details extend it (Hersen & Barlow, 1976; Sidman, 1960).

Dissemination Process

Since any technique may be applied to behaviors other than those studied by its developers, the audience for dissemination efforts crosses traditional boundaries that segregate service delivery efforts. The process of disseminating techniques usually focuses on the developer's professional peers and/or on service providers

who may find the procedure useful.

Dissemination to professional peers usually takes place through publications and presentations—writing journal articles, chapters, or books and presenting research at professional meetings. The implied actions for members of the target audience is to pick up on a line of research, extend it further, or incorporate it into their teaching or research.

Techniques can also be appropriately disseminated to service providers, including program directors, teachers, aides, group home staff, and workshop staff. These people usually are reached through service journals, inservice training, or popular books. The general purpose of such dissemination is to provide ideas about ways to deal with certain behaviors of students or client groups. The specific applications of the techniques are left to the service providers themselves.

DEMONSTRATIONS

A demonstration, used here in the context of a demonstration project, illustrates that a significant social problem can be solved in a particular way and points out one successful method of solution. A demonstration is a collection of intervention techniques and administrative arrangements that result in important behavioral changes across individuals who typically receive a particular kind of service. Demonstrations are exemplars of a desired service delivery rather than isolated behavior changes and are intended to communicate about the success of that service to a wide consumer audience.

Dissemination Purpose

Dissemination purposes are cumulative across levels of development; thus, demonstration programs are disseminated for two purposes. First, the intervention techniques included in the demonstration project may themselves be disseminated to communicate that a given technique works and is available for use. The second purpose, not shared with techniques, is to show that a particular service objective can be achieved with a given method. Dissemination for this second reason generally is undertaken to change the expectations or attitudes of persons who are in a position to use an intervention program or to enable its use; to obtain increased funding for services for a target group (or to obtain endorsement of the program as eligible for reimbursement); to change laws regarding services; to develop political or popular support for services (such as to gain acceptance of a procedure as standard practice); and/or to develop new types of programs or services to address unmet or inadequately met needs of a given group of persons. The purpose is to show the feasibility of solving the problem in one particular way—the method used in the demonstration project.

In contrast to techniques, demonstrations are not value free. A demonstration specifies a behavioral outcome, judges the outcome to be a desirable result of services across individuals, and illustrates a method of obtaining it. An element of dissemination efforts, therefore, is to persuade others to make a similar value judgment. One example of demonstration projects as levels of procedural development is the repeated illustration in recent years that severely handicapped students can master a variety of educational tasks when clearly defined goals, direct instruction, frequent measurement, and regularly scheduled teaching sessions are used. Communication about these successes has no doubt contributed both to the consensus that such educational progress is desirable, and to the development of legislative and public support for such services.

Criteria for Dissemination

Demonstration programs should meet several criteria prior to beginning dissemination activities. In addition to the criteria specified for techniques, demonstrations should incorporate the following conditions:

(1) The behavioral effect achieved by the demonstration program should be *important to society*. Since demonstrations imply successful service across individuals with a given problem, the solution provided by the demonstration should be perceived as desirable both by the recipients of service (as is the case with tech-

niques) and by those individuals who enable the intervention program to be used.

(2) The set of intervention procedures that comprise the demonstration must be described and *standardized.* Without clear description and standardization of use across service recipients, evidence of the utility of the proposed approach is limited to defense of specific techniques with specific individuals.

(3) The demonstration program must produce the same effect with each of several participants. In other words, the intervention program must work consistently when implemented by developers. This is a question of program effectiveness. There must be a *replicable* functional relationship between implementation of the intervention program and subjects' improvement.

Development

The process by which demonstrations are developed is programmatic research and development (Risley, Clark, & Cataldo, 1976; Walker, Hops, & Greenwood, 1976). In this process, a line of research is followed from documentation that a problem exists through substantiation that an effective intervention has been assembled to demonstration that the problem can be solved across individuals.

Dependent variables. In contrast to the development of techniques where any of a variety of socially significant behaviors might be studied, the development of demonstrations requires clear focus on a specific behavioral problem or outcome. Azrin (1977) describes this difference by distinguishing between "problem-oriented" and "method-oriented" research, suggesting that the solution to human problems in applied settings is more likely with procedures that reflect a "problem orientation." Azrin (1977) cautions that a focus on experimental rigor, which he calls a "method orientation," might produce clean research, but is less likely to leave subjects and others satisfied as consumers than is the outcome focus of the "problem-oriented" method.

It is also critical that the behaviors established as goals in a demonstration program represent socially acceptable outcomes. This issue is described in the literature as one aspect of social validation, and has emerged in recent years as an important issue in evaluating intervention programs (Kazdin, 1977; Wolf, 1978). Social validation uses the subjective judgments of significant others in the subject's natural environment to validate the effects of an intervention. If objective data suggest subject improvement following intervention, but parents, teachers, subjects themselves, or others do not believe that such improvement has taken place, the intervention cannot be judged to be completely successful. If, on the other hand, subjective ratings corroborate empirical data, support for the intervention is strong, and it can be recommended to others.

The focus on social importance of behavioral outcomes in demonstration programs raises the issue of the broader effects of an intervention: Does the improvement transfer across settings and/or behaviors and maintain across time? This question seems obvious but is seldom asked of demonstration programs. It should, however, be posed before a particular intervention program is offered as a means of solving socially significant problems. Behavioral improvement which is not evident across settings or does not persist across time can hardly be considered to be a "cure," which Azrin (1977) describes as the critical test of a demonstration.

Independent variables. The independent variable in the development of demonstration programs is a *collection* of treatment procedures designed to change the behavior under study. As such, it is distinguished from techniques which are individual procedures. Three general strategies appear relevant to the selection of techniques that are to be included in demonstrations. First, techniques might be included because they increase the effectiveness or efficiency with which the behavioral outcome is achieved. For example, procedures might be combined to weaken inappropriate responding while strengthening the desired behaviors.

The second strategy for combining pro-

cedures in demonstration programs is to incorporate techniques that increase the likelihood of success with a range of individuals. Thus, a demonstration program might encourage using a variety of reinforcing events, perform task analysis of target behaviors at a level of detail which would allow individuals of various levels to progress through the program, or include treatments for a variety of "secondary" problems.

Finally, procedures often are included in demonstration programs to assist in the administration of the intervention. These might include: (a) publicly posting staff responsibilities (Cataldo & Russo, 1978); (b) increasing the probability of supervisor acknowledgement of program results (Risley & Favell, 1979); and (c) use of consultants to monitor program effectiveness on a regular basis (Herbert-Jackson, O'Brien, Porterfield, & Risley, 1977).

Whatever techniques are included in the demonstration, their use should be standardized across recipients of service. Standardization of procedures is important to ensure that each time the program is applied, it is used in virtually the same way. This, in turn, is important since judgments about the effectiveness of a demonstration can be made only when the procedures used with one individual match those used with others. The purpose of developing any demonstration should be to provide a reliably effective means for meeting specified service needs—one which can be counted on to accomplish certain results. To maximize the likelihood that each use of the procedure will produce the same results, and to establish the dependability of the service, standardization is essential.

The combination of techniques applied in a demonstration program should also represent a socially acceptable method of solving the targeted problem. Increasingly, legal and social constraints on the use of behavioral techniques limit the options available to service providers. Kazdin (1977) and Wolf (1978) apply the concept of social validity not only to the results of treatment programs, as described above, but also to the methods used to achieve those results. To be effective, demonstrations must rely on techniques considered by society as appropriate for solving the problem.

A final characteristic of the independent variable (collection of intervention techniques) in the development of demonstrations relates to level of scale. It is useful to distinguish between treatment demonstrations and program demonstrations to illustrate the potential variety and scope. Treatment demonstrations deal with discrete skill areas such as toileting (Foxx & Azrin, 1973), motor development of handicapped infants (Hanson, 1978), language (Guess, Sailor, & Baer, 1976), and focus only on the way in which a specific treatment strategy is structured, delivered, and evaluated. Program demonstrations provide a broader scope of services which usually focus on a given setting, target population, and service dimension rather than on a discrete skill area. Examples include the University of Washington's Down's Syndrome program (Hayden & Haring, 1978) and a program for training and placing handicapped adults in food service industry jobs (Sowers, Thompson, & Connis, 1979). These demonstrations share one common element: they are comprehensive service delivery *systems* which include both direct service and program support components. In this sense they are complete programs which attempt to account for all of the factors necessary in providing the targeted services.

Research questions. The process of developing a demonstration involves asking at least two questions about the relationship between these dependent and independent variables. The first is analogous to that asked about techniques: Does the intervention program reliably and functionally change the behavior of concern?

The second question relates to the criterion for disseminating demonstrations, described earlier: Does the program work with all or most of the individuals who display the targeted problem? This issue is one of generality across potential service recipients. A variety of group designs are useful in answering this ques-

tion, as is careful documentation of results with a series of representative subjects.

Dissemination Process

The process of disseminating demonstration programs generally involves brief exposure to the program through the media; the popular press; visits by members of the target audience to a program site; personal contact (mail, telephone, face-to-face interactions); or, among the professional ranks, publications and/or conference presentations. The target audiences for these dissemination processes include subgroups which are widely divergent but share the goal of improving services for a specific target population. They include potential service recipients, parents, other advocates of the service, service providers, trainers of service providers, representatives of governmental agencies concerned with the problems of social service recipients, politicians, professional peers (other researchers or service directors), and others. Obviously, certain dissemination processes are most appropriate with given subgroups. For example, media dissemination is likely to be useful in reaching large numbers of nonprofessional contacts; site visits and personal contacts hold the most potential when attempting to reach advocacy groups, service directors, governmental agents, or politicians; and professional publication or presentation is most appropriate when attempting to reach other researchers or program developers.

These processes of dissemination suggest various courses of action for the respective audience members to whom they are directed. For service recipients, their parents, and their other supporters, the action called for is advocacy for increased service or for general service improvements; for fellow professionals (developers) the action implied by dissemination is to conduct research which will provide further extension (i.e., systematic replication) or additional validation of the program; for politicians to whom demonstration information is disseminated, the desired response is passage of enabling legislation or appropriations measures which enable application of the program on a larger scale; for governmental agencies, the implied action is granting of additional research and development funds to continue development, evaluation, or dissemination of the program.

MODELS

A program model illustrates that a significant social problem can be solved in a particular way, *and* provides a prototype or pattern for replication in other settings where similar services could be provided. Models are similar to demonstrations in that they are designed to achieve defined behavioral outcomes and involve standardized combinations of techniques and procedures. They differ in the additional criteria which must be met before proposing adoption by others. Prior to dissemination, the use of a model should be supported by field test data showing that the model can be used successfully in nonexperimental settings by individuals other than the developers (Meyen, Note 2). This requires, in turn, that models include precise instructions for use that are designed to maximize the fidelity and the effectiveness of replication.

The importance of model programs lies in the potential for dissemination and utilization of service strategies of known cost and effectiveness. Models could reduce redundant local investment in program development, shorten the time between resource allocation and delivery of services, and reduce current expenses for ineffective services.

Purpose of Dissemination

In addition to the dissemination purposes listed above, model programs may be disseminated for the purpose of adoption or replication in other service agencies. The primary purpose of dissemination activities at the adoption level is to increase the level of program usage by nondevelopers—that is, to gain adoptions and subsequent implementations of the standardized program by potential users (to propagate the model). As such, dissemination of service models is like that carried out for commercial cur-

riculum materials. The difference is that there are few methodological requirements for the latter.

Dissemination for adoption is the critical step in increasing services and service efficiency. It is assumed that this step follows dissemination undertaken to spread information *about* a program. The focus on adoption/implementation features instruction regarding *how to use* the program.

Criteria for Dissemination

Since the levels of program development and use are cumulative or sequential, the criteria of dissemination for demonstration purposes apply to that for adoption purposes as well. In addition, at least four other criteria unique to adoption purposes must be applied:

(1) A highly detailed, user-oriented description of all procedures in the model is required to enable high fidelity implementation. This description usually takes the form of a program implementation manual which includes checklists and other techniques to facilitate installation of program components.

(2) Non-developers must be able to implement the program successfully in a controlled context when assisted by program developers. This criterion is crucial since dissemination efforts are designed to secure implementation by others.

(3) Effects and costs of using the program must compare favorably with those of other programs or other approaches to the same problem. This is a comparative research issue. Only those programs which compare favorably with the alternatives should be considered seriously by potential users.

(4) The program must be "contextually appropriate" (Fawcett, Mathews, & Fletcher, 1980). Fawcett et al. use this term to refer to such characteristics as simplicity, flexibility, compatibility, and sustainability of the program.

Development of Models

The process of model development begins with a successful demonstration of service effectiveness and involves the *packaging* of procedures for potential users and *field testing* by non-developers in locations other than that in which the model was developed.

Dependent variables. The primary dependent variable in model development is the same as for demonstrations: A problem viewed by society as important enough to commit resources to its solution. Other measures of interest in field testing relate to the effectiveness of alternate approaches in solving the problem and the cost of the proposed solution.

Independent variables. The independent variables of concern in model development include those described for demonstrations and additional variables related to standardization of procedures. To achieve standardized implementation of the model by others, careful packaging is required. Packages are collections of standardized procedures that include detailed written descriptions, instructions, checklists, and other printed aids and that often feature supplementary media components such as slides, filmstrips, films, videotapes, audiotapes, or any other methods of relaying information to achieve uniformity in implementation. Usually such packages are supplemented with workshop training, technical assistance consultation, or other forms of support for using technologies in the manner in which they were designed. The extent to which such materials lead to accurate implementation of procedures is of important concern. Successful replication is probably facilitated if developers communicate "what not to do" or what to avoid, as well as how to operate the program correctly.

As with demonstrations, it is useful to distinguish between at least two levels of model scale: intervention models and program models. The scope of intervention models is narrow compared to that of program models. Intervention models might include several components, all of which relate *directly* to the targeted behavior, rather than any service support functions. Generally, an intervention program is designed to be used by line staff with direct service responsibilities, and it is usually designed to meet only one of their client responsibilities. For example, CORBEH programs for remediating

specific school-related behavior disorders (Walker et. al., 1976) are examples of intervention models based on behavioral procedures, contain several components, are designed for use by direct service staff, and focus on one specific class of behaviors (e.g., academic survival skills) or a set of closely related responses within a specific skill area. Certain "Self-Help" Treatment Packages (c.f. Clark, Green, Macrae, McNees, Davis, & Risley, 1977) provide additional examples of intervention models. However, since they are often used (in fact *intended* for use) without supervision, they are susceptible to problems of implementation and, therefore, of effectiveness.

In contrast, program models typically specify not only specific intervention procedures, but also the array of administrative and support services required to deliver them effectively. For example, in the Specialized Training Program Model for employment of severely handicapped adults (Bellamy & Horner, Note 3), procedures are included for program supervision, staff scheduling, contract procurement, billing, inventory management, staff training, and agency accounting, in addition to the vocational training and supervision procedures that directly affect service recipients. Similar breadth is apparent in the Teaching Family Model for serving adolescent delinquents (Phillips, Phillips, Fixsen, & Wolf, 1972; Philips & Wolf, 1978) and the Direct Instruction (Becker & Engelmann, 1978) and Behavior Analysis (Bushell, 1978) Models in Project Follow Through. Such program models provide therapeutic procedures for service recipients and administrative procedures for service providers. Development of a number of these administrative components has taken place under the rubrics of organizational behavior management and behavioral systems analysis.

Research questions. Two primary research questions should be asked as an effective demonstration is refined into a model:

(1) Can the model be used effectively by potential consumers in a natural or field setting? This is the critical question addressed in field testing. Once a program has been successful as implemented by the developers in a controlled setting, it must be shown to work when implemented by nondevelopers in an actual service setting. At this stage of research, the developers might lend technical assistance to the consumers in implementing the program. However, if the program is designed to be used without technical assistance during ultimate routine use, the field test should be conducted under these conditions.

(2) Do the relative costs and effects of the model compare favorably with alternative approaches to solving the problem? Adoption of model programs by generic service delivery agencies normally will be affected by the ability of these agencies to implement the necessary procedures and achieve better results with existing resources. Thus, the program must not only be effective, it must also be cost-efficient, and this efficiency must be documented and replicable if local or state funding agencies are to consider its adoption seriously.

Dissemination Process

Dissemination of model programs and interventions is aimed primarily at deliverers of service (program administrators, agency heads, or boards of directors), who can adopt or implement the model. It is also necessary to establish a method for expanding the model further and for promoting program survival with available resources (Meyen, Note 2). One mechanism to do this which is seldom used but which has the potential for greater impact is to link the model with the existing state-level bureaucracy for service delivery programs (Thomas, 1979; Timbers, Seligson, Maloney, & Maloney, Note 4). Usually, dissemination is done directly by the program developers, but sometimes it is done by an intermediary service broker such as a state facilitator within the National Diffusion Network (NDN), or by a specially trained technical assistant. The processes by which standardized programs are disseminated to providers generally include implementation manuals, pre-implementation training workshops, and ongoing technical con-

sultation. Implementation manuals differ from other dissemination materials in that they are technical in nature and are written in sufficient detail to allow adopters to replicate program procedures and obtain outcomes comparable to those achieved by developers. In short, they are precise "how-to-do-it" guides which contain many features such as sample forms, checklists, and criteria to facilitate high fidelity program implementation. Training workshops often build on the skills presented in the implementation manuals, and videotape and role playing formats are frequently used to demonstrate program procedures and to give training participants feedback on their use of the skills. Ongoing technical assistance might take the form of periodic consulting or program evaluation visits by program developers or their representatives to the implementing agency Telephone and/or mail contact is usually provided on a needs basis. The actions implied for service providers by these dissemination activities are adoption, implementation, and institutionalization of the program within a service agency.

A distinction is necessary between those users who *adopt* the model and implement the procedures as specified by the developers and those who *adapt* the model, treating it as a demonstration and choosing to use only some of the procedures as they, the users, see fit. Clearly, a model program that meets the criteria described earlier can be disseminated for either purpose. However, the data supporting the effectiveness of the model should be used only to justify full implementation or adoption.

In full implementation, both the purpose for which the model is used and the details of use are specified by the developer. The user is expected to determine if the model fits the problem with which s/he is faced, and involves procedures which s/he can implement. If so, the model should be used as described. If the program is not used as specified, the probability of achieving successful outcomes can only be surmised. Fawcett et. al. (1980) and Berman and McLaughlin (Note 5), however, have underscored the importance of "flexibility" and "ownership" respectively, in achieving high fidelity program implementation. Timm (Note 6) has suggested that program developers can accommodate adopters' ownership interests by specifying which aspects of their programs they consider to be absolutely essential, which are highly recommended but optional, and which are useful, but expendable.

APPRAISAL AND RECOMMENDATIONS

The distinction among techniques, demonstrations, and models and the particular dissemination purposes served by each provides a useful framework for analyzing innovative practices in human services. This section examines the effects of the effort to date in developing innovative practices and suggests priorities for future efforts.

Advancements in *techniques* have been the most consistent contribution of work done to date in behavior analysis. From these efforts, new or improved procedures are now available to change socially important target behaviors effectively and to do so in a socially acceptable manner.

Strategies for disseminating techniques have included training programs, conference presentations, and various publications. Recent work in the field has also been successful in developing *demonstrations.* Dissemination activities have included extensive access to developers of demonstration programs, and emphasis on communication about successful projects through newsletters and other media. The success of these efforts is evidenced by both philosophical commitment and resource allocations from Congress, the courts, and local education agencies. Development and dissemination of demonstration programs have helped mandate services for more people who need them (i.e., all severely handicapped students), and resources to accomplish these mandates have begun to emerge.

Precisely because of these successes, the purposes which dissemination efforts should now begin to serve can no longer be met through the development of

techniques and demonstrations alone. In commenting on similar issues in a different service area, Laski (1979) suggests that although demonstrations of service success could provide the logical basis for a legal mandate to extend services, these demonstrations do not provide needed information for organization and systematic delivery of quality services on a broad scale. Such is the problem now facing program developers. The objective of dissemination efforts should no longer be only to communicate about techniques and to argue for program support. Rather, significant attention should now be turned to the development and dissemination of program and intervention *models* to increase the quality and dependability of a wide range of services. The standardized and replicable strategies produced by models fit current needs in at least three important ways, as Hayden and Haring (1978) have suggested: (1) models increase the availability of service programs with demonstrated effectiveness, enabling better use of limited resources; (2) models provide an alternative to services that are poor, weak, or of unknown effect; and (3) models enable dispersed service programs to avoid continual rediscovery of effective procedures.

Because intervention techniques and public commitment are now widely available to support educational services to a variety of service populations, attention should be turned to the improvement of quality in these programs. This implies a shift in emphasis of many current projects from demonstrations to models. Such a shift implies that a federal investment might profitably be placed in serveral new activities:

(1) Providing support to allow currently successful demonstrations to become models. Demonstrations would use the funding to develop user-oriented procedural descriptions and to conduct field tests in dispersed sites.

(2) Developing mechanisms for ongoing support to programs that have adopted a model (Emrick & Peterson, Note 7) in order to provide quality control and program evaluation. These funds might come from state or other generic sources as suggested by Timbers et al. (Note 4).

(3) Establishing a federally-sponsored technical assistance consortium specifically to support model development and implementation activities in educational and other human services. Such a group could be composed of individuals with model development experience and could meet such needs as: (a) assisting both local service programs and model developers in identifying model adoption possibilities (as done now by the National Diffusion Network); (b) assisting demonstration programs prepare materials and conduct field tests necessary for model development; (c) conducting third party evaluations of model development and model implementation efforts (e.g., Jones, Note 8); (d) developing evaluation technologies for predicting likelihood of successful model adoption, fidelity of model implementation, and model effectiveness of potential adopters (Davis, 1978); and (e) providing technical assistance to service agencies to implement model programs.

(4) Providing incentives to personnel preparation programs to include training in available program models. Students could learn how to fill various roles within a model, including directing program replications or further disseminating the model.

Innovative behavioral programs have been highly successful in developing and disseminating techniques and demonstrations, and these activities should continue. However, changing needs of the field to provide effective services on a larger scale suggest that applied behavioral researchers and federal investors should begin to turn their attention to developing and disseminating standardized models as well.

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